

Patent Claims

1. A device to detect molecules or molecule classes or molecule mixtures, characterized in that
 - a) at least two surfaces with immobilized molecules or molecule classes are provided on a panel of the device, whereby one surface is employed for control or standardization purposes, and the other serves to detect an analyte, whereby
 - b) the two surfaces are structured in such a manner that they come into contact at essentially the same point in time with an entire sample from which molecules or molecule classes or molecule mixtures are to be tested for, and
 - c) whereby both surfaces are structured and arranged with respect to each other in such a manner that they are evaluated jointly, thereby forming a graphic arrangement that can be read out visually.
2. The device to detect molecules or molecule classes or molecule mixtures according to claim 1, characterized in that the surfaces are in a planar and/or spatial arrangement with respect to each other.
3. The device to detect molecules or molecule classes or molecule mixtures according to claim 1 or 2, characterized in that the sample from which the analyte or analytes is/are to be tested for is present in liquid, solid or gaseous form or else in physical intermediate states or combinations thereof.
4. The device to detect molecules or molecule classes or molecule mixtures according to any of claims 1 to 3, characterized in that the surfaces are represented by one or many symbols linearly or in a matrix arranged in a different manner.

5. The device to detect molecules or molecule classes or molecule mixtures according to any of claims 1 to 4, characterized in that the immobilized molecules or molecule classes are visually evaluated together by means of a detection reaction without additional technical aids, whereby the various surfaces appear colored, black or gray, or are tinted in a mixture of colors and/or shades of gray.
6. The device to detect molecules or molecule classes or molecule mixtures according to any of claims 1 to 5, characterized in that it is configured as a vessel having one or more openings.
7. The device to detect molecules or molecule classes or molecule mixtures according to claim 6, characterized in that the surfaces are located inside the vessel or else one or more surfaces are located on the vessel wall.
8. The device to detect molecules or molecule classes or molecule mixtures according to any of claims 1 to 7, characterized in that the surfaces are rendered visible as symbols, “-” for negative and “+” for positive, or a circle for negative and a circle with a dot or dots in it for positive.
9. The device to detect molecules or molecule classes or molecule mixtures according to any of claims 1 to 8, characterized in that the immobilized molecules or molecule classes and/or mixtures are selected from the group consisting of antibodies, antigens, DNA, RNA, enzymes, substrates, receptors, ligands or combinations thereof.
10. A method to detect molecules or molecule classes or molecule mixtures, comprising

- a) establishing contact between a sample from which molecules or molecule classes or molecule mixtures are to be tested for, with the panel of a device in such a manner that they come into contact at essentially the same point in time with the entire sample from which molecules or molecule classes or molecule mixtures are to be tested for, whereby at least two surfaces on the panel of the device are provided with immobilized molecules or molecule classes and/or mixtures in such a way that one surface is employed for control or standardization purposes, and the other serves to detect an analyte, and whereby the two surfaces are structured and arranged with respect to each other in such a manner that they are evaluated together, and that they form a graphic arrangement that can be read out visually, and
- b) a read-out and evaluation of the surfaces.

11. The method according to claim 10, characterized in that the surfaces are read out in a planar and/or spatial manner.
12. The method according to claim 10 or 11, characterized in that the various detection surfaces appear colored, black or gray, or are tinted in a mixture of colors and/or shades of gray.
13. The method according to any of claims 10 to 12, characterized in that the surfaces are read out in one or many symbols linearly or in a matrix arranged in a different manner.
14. The method according to any of claims 10 to 13, characterized in that the surfaces are rendered visible as symbols, “-” for negative and “+” for positive, or a circle for negative and a circle with a dot or dots in it for positive.

15. The method according to claim 14, characterized in that symbols consisting of several circles inside each other having one center dot are rendered visible, said dot appearing only in a positive detection case, and whereby each individual circle only becomes visible above a certain concentration value of the analyte or a star with which each of the spokes becomes visible above a certain concentration value and, in the positive case, a predefined spoke appears or the individual spokes detect the presence of several analytes and one spoke appears above a certain concentration value or a combination of these symbols.
16. The method according to any of claims 10 to 15, characterized in that the sample from which the analyte or analytes is/are tested for, is present in liquid, solid or gaseous form or else in physical intermediate states or combinations thereof.
17. The method according to any of claims 10 to 16, characterized in that whole blood, capillary blood, umbilical cord blood, arterial or venous whole blood, serum, plasma, urine, feces, tears, saliva, body mucus, dyed solutions, solutions containing solid constituents or high-viscosity liquids are used as the sample.
18. The method according to any of claims 10 to 17, characterized in that the sample is prepared before, during or afterwards by means of purification, aliquotation, derivatization and/or isolation in order to be applied onto the panel according to the invention.
19. The method according to any of claims 10 to 18, characterized in that the detection reactions of molecules, molecule classes or molecule mixtures are

selected from dye, radio nucleotide, antibody, DNA or RNA, biotin, avidine or enzyme detection reactions or combinations thereof.

20. The method according to any of claims 10 to 19, characterized in that the immobilized molecules or molecule classes and/or mixtures are visually tested for by means of a detection reaction without additional technical aids.
21. The method according to any of claims 10 to 20, characterized in that technical aids are employed for the read-out and/or evaluation in order to allow a visual evaluation, or else the method, for instance, densitometric methods, spectroscopic or electrochemical methods are combined with the read-out and/or evaluation according to the invention.
22. The method according to any of claims 10 to 21, characterized in that the method is combined with flow-through tests, agglutination tests and/or solid-phase tests and it comprises one, several or many pairs of symbols.
23. The method according to any of claims 10 to 22, characterized in that the method is combined with the fast lateral-flow test method, and it comprises two, several or many pairs of symbols.
24. Use of a device according to any of claims 1 to 9 to detect molecules or molecule classes in human medicine, veterinary medicine or in plant diagnostics, food-product diagnostics, environmental diagnostics, forensic diagnostics, pharmacology, toxicology, in the case of allergies, diseases of the autoimmune system or of the metabolic system, infectious diseases, venereal diseases, parasitic diseases, detection of small molecules such as drugs, pharmaceuticals or metabolites, cell mediators, tissue typing, species typing, food typing, antigen typing, epitotyping and DNA or RNA detection.

25. The use according to claim 20 for diagnosis immediately before, during or after a therapeutic measure.